

# **EXHIBIT D**

## International Agency for Research on Cancer (IARC) - Summaries & Evaluations

### N-NITROSODIMETHYLAMINE

**VOL.:** 17 (1978) (p. 125)

**CAS No.:** 62-75-9

**Chem. Abstr. Name:** *N*-Methyl-*N*-nitrosomethanamine

#### 5. Summary of Data Reported and Evaluation

##### 5.1 Experimental data

*N*-Nitrosodimethylamine is carcinogenic in all animal species tested: mice, rats, Syrian golden, Chinese and European hamsters, guinea-pigs, rabbits, ducks, mastomys, various fish, newts and frogs. It induces benign and malignant tumours following its administration by various routes, including ingestion and inhalation, in various organs in various species. It produces tumours, mainly of the liver, kidney and respiratory tract. It is carcinogenic following its administration prenatally and in single doses. In several studies, dose-response relationships were established.

##### 5.2 Human data

No case reports or epidemiological studies were available to the Working Group. Available information on occurrence suggests that the general population may be exposed to low levels of *N*-nitrosodimethylamine; however, no exposed group suitable for an epidemiological investigation has yet been identified. Reports of relatively high levels in certain pesticide formulations and of occupational exposures that may have occurred in the manufacture and use of rocket fuels may permit the identification of exposed groups.

##### 5.3 Evaluation

There is *sufficient evidence* of a carcinogenic effect of *N*-nitrosodimethylamine in many experimental animal species. Similarities in its metabolism by human and rodent tissues have been demonstrated. Although no epidemiological data were available (and efforts should be directed toward this end), *N*-nitrosodimethylamine should be regarded for practical purposes as if it were carcinogenic to humans.

**Previous evaluation:** [Vol 1 \(1972\)](#)

**Subsequent evaluation:** Suppl. 7 (1987) (p. 67: **Group 2A**)

For definition of terms, see [Preamble Evaluation](#).

#### Synonyms

- *N,N*-Dimethylnitrosamine
- Dimethylnitrosamine
- DMN
- DMNA
- NDMA

See Also:

[Toxicological Abbreviations](#)  
[Nitrosodimethylamine, n- \(CICADS 38, 2002\)](#)